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IS 1406 (1995): Rectangular Tins for Liquids - [MTD 32: Metal Containers]

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द्रवों के लिये आयताकार डिब्बे – विशिष्टि

(चौथा पुनरीक्षण)

Indian Standard

RECTANGULAR TINS FOR LIQUIDS — SPECIFICATION

(*Fourth Revision*)

UDC 621·798·144 : 621·642·11·03

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

February 1995

Price Group 2

Metal Containers Sectional Committee, MTD 32

FOREWORD

This Indian Standard (Fourth Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Metal Containers Sectional Committee had been approved by the Metallurgical Engineering Division Council.

This standard was first published in 1959 and subsequently revised in 1963, 1973 and 1981. While reviewing the standard the committee decided to revise it to align with the present practices being followed by the Indian industry.

The rectangular range of tins is perhaps the most generally useful and familiar form of liquid containers. These are used for packing burning oils, lubricating oils and solvents, insecticides and disinfectants, varnishes and paints, soldering fluids, brake fluids, essential oils and numerous other products.

In this fourth revision, following changes have been made:

i) 4 litre, 2·5-litre, 200-ml and 100-ml rectangular tins have been included.
ii) Hydraulic pressure test has been deleted.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded, off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

RECTANGULAR TINS FOR LIQUIDS — SPECIFICATION

(*Fourth Revision*)

1 SCOPE

This standard covers the requirements of 5-litre, 4-litre, 3-litre, 2·5-litre, 2-litre, 500-ml, 250-ml, 200-ml and 100-ml rectangular tins used for packing liquids.

2 REFERENCES

The following Indian Standards are necessary adjuncts to this standard:

IS No.	*Title*
1394 : 1984	Glossary of terms relating to metal containers (*third revision*)
1993 : 1993	Single cold-reduced tinplate and single cold-reduced black plate—Electrolytic and hot dipped tinplate sheet and blackplate sheet (*third revision*)
3259 : 1966	Methods of sampling of metal containers
12591 : 1988	Cold-reduced tin free steel in sheet form
13954 : 1994	Double cold-reduced electrolytic tinplate sheet

3 TERMINOLOGY

3.0 For the purpose of this standard, terms defined in IS 1394 : 1984 shall apply in addition to the following.

3.1 Built-up Tin — A tin made up of at least two (but often more) components, the side walls being formed by shaping and joining the edges.

3.2 Rectangular or Oblong Tins — Flat, parallel sided containers having unequal adjacent sides.

3.3 Punch Plug Dimensions — The dimension of that part of the press tool that determines the countersink dimensions of the end of a tin.

3.4 Double Seam — A rolled, mechanically formed, joint comprising five interlocking 'faces' or thicknesses of the two components thus jointed, and being two thicknesses of the one component and three thicknesses of the other.

4 CAPACITY AND DIMENSIONS

The nominal filling volume, nominal base dimensions, precise punch plug dimensions and nominal height shall be in accordance with Table 1.

5 CONSTRUCTION

5.1 The tin shall be of built-up construction with the body having a side seam which may be soldered internally or externally, cemented or welded.

5.2 The ends of the tin shall be compound lined and double seamed to the body.

6 MATERIAL

6.1 The tins shall be manufactured from tinplate or black plate complying with the requirements of IS 1993 : 1993 or double cold reduced electrolytic tinplate sheet conforming to IS 13954 : 1994. The tins may also be manufactured from tin free steel plate conforming to IS 12591 : 1988. The thickness of tin coating shall be agreed to between the purchaser and the supplier.

7 HANDLE

The strap handles (made of tin plate) shall be fitted to the 5-litre, 4-litre, 3-litre and 2·5-litre tins. Strap handle shall be secured in the position as shown in Table 2.

8 CLOSURES

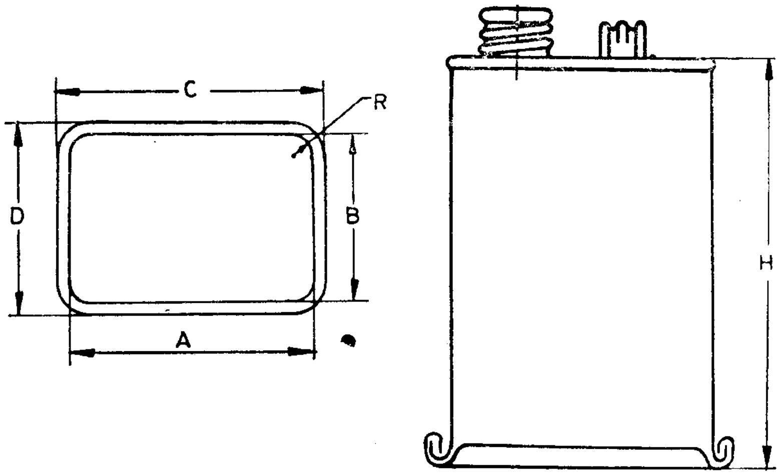
8.1 The tins may be fitted with a variety of closures like rolled threaded necks and caps, tinplate closures soldered or clinched in position, and plastics closures pressed in position. In the latter case the filler shall normally close the filled container with the plastics components.

8.2 The position of closures for 5-litre, 4-litre, 3-litre and 2·5-litre tins shall be as shown in Table 2.

Table 1 Basic Dimensions of Rectangular Tin

(*Clause* 4)

All dimensions in millimetres.

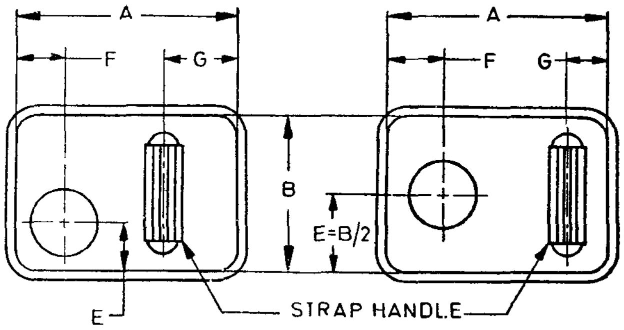


Nominal Filling Volume	Overseam Dimensions		Nominal (Internal) Base Dimension $A \times B$ ± 0·2	Punch Plug Dimensions ± 0·05[1]		Corner Radius R ± 1·0	Nominal Thickness of Body and Ends
	$C \times D$ ± 0·5	H ± 1·0		A_1	B_1		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
5-litre	178 × 111	294	175 × 108	174·39	107·39	16	0·24
	169 × 106	315	166 × 103	165·74	102·57	16	0·24
4-litre	169 × 106	253	166 × 103	165·74	102·57	16	0·22
3-litre	178 × 111	178	175 × 108	174·39	107·39	16	0·22
	155 × 96	238	152 × 93	151·00	92·96	16	0·22
2·5-litre	178 × 111	151	175 × 108	174·39	107·39	16	0·22
1-litre	117 × 64	168	114 × 61	113·79	60·96	16	0·21
	117 × 61	186	114 × 58	113·79	57·51	19	0·21
500-ml	117 × 64	88	114 × 61	113·79	60·96	16	0·20
	96 × 50	139	93 × 47	92·43	46·25	15	0·20
	99 × 45	154	96 × 42	95·63	41·40	15	0·20
250-ml	96 × 50	78	93 × 47	92·43	46·25	15	0·19
	72 × 45	107	69 × 42	68·58	41·28	13	0·19
	73 × 38	127	70 × 35	69·34	34·42	12	0·19
200-ml	72 × 45	95	69 × 42	68·58	41·28	13	0·18
100-ml	72 × 45	51	69 × 42	68·58	41·28	13	0·18

[1] This deviation must not be confused with manufacturing tolerances. The deviation is not a manufacturing tolerance but is given to allow different sizes of punch plugs to be used within a limited range. Punch plug dimensions are given for guidance of the can manufacturer and should not be considered for inspection purposes.

Table 2 Closure and Strap Handle Position for 5-litre, 4-litre, 3-litre and 2·5-litre Tins

(*Clauses* 7 *and* 8.2)



TYPE 1 TYPE 2

Nominal Filling Volume	Nominal (Internal) Base Dimensions (mm) $A \times B$	Closure Position			Strap Handle Position *G* mm
		Type	*E* mm	*F* mm	
(1)	(2)	(3)	(4)	(5)	(6)
5-litre	175 × 108	1	40	40	59
		2	59	50	59 or 29
	166 × 103	1	40	40	29
		2	51·5	50	29
4-litre	166 × 103	1	40	40	29
3-litre	175 × 108	1	40	40	59
		2	59	50	59 or 29
	152 × 93	1	40	40	59
2·5-litre	175 × 108	1	40	40	59
		2	59	50	59 or 29

8.3 The position of closures for 1-litre, 500-ml, 250-ml, 200-ml and 100-ml tins shall be as shown in Table 3.

9 INTERNAL COATING

The requirements for internal protective coating to suit particular products being packed shall be as agreed to between the purchaser and the supplier.

10 DECORATION

The requirements for lithographed external decoration of the bodies of tins shall be as agreed to between the purchaser and the supplier.

11 TESTS

11.1 Air Pressure Test

The tin when subjected to an air pressure of at least 15 kPa, shall show no sign of leakage when immersed in water for a period of 15 seconds.

11.2 Handle Pull Test

The handle of the tin when tested shall be capable of withstanding a gradually applied vertical force of 10 kgf for a period of two minutes.

12 SAMPLING

Representative samples of the tins for tests shall be drawn in accordance with IS 3259 : 1966.

13 MARKING

13.1 Each tin shall be embossed or marked legibly and indelibly with the following particulars:

a) Indicating the source of the manufacturer,

b) Any other information as required by the purchaser.

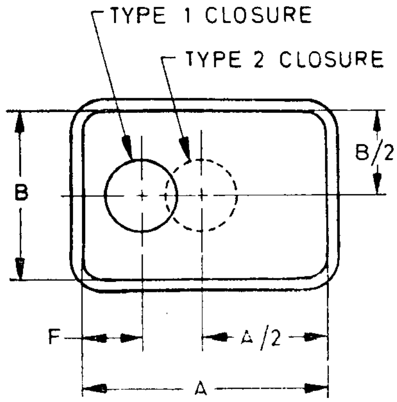
13.2 BIS Certification Marking

13.2.1 The tins may also be marked with the Standard Mark.

13.2.2 The use of Standard Mark is governed by the provisions of Bureau of Indian Standards Act 1986 and the Rules and Regulations made thereunder. The details of conditions under which licence for the use of Standard Mark may be granted to the manufacturers or producers may be obtained from the Bureau of Indian Standards.

Table 3 Closure Position of 1-litre, 500-ml, 250-ml, 200-ml and 100-ml Capacity Tins

(*Clause* 8.3)



Nominal Filling Volume	Nominal (Internal) Base Dimensions (mm) *A* × *B*	Closure Position	
		Type	*F* (mm)
(1)	(2)	(3)	(4)
1-litre	114 × 61	1	30·5
		2	—
	114 × 58	1	29
		2	—
500-ml	114 × 61	1	30·5
	93 × 47	1	23·5
	96 × 42	1	21
250-ml	93 × 47	1	23·5
	70 × 35	1	17·5
	69 × 42	1	23·5
200-ml	69 × 42	1	23·5
100-ml	69 × 42	1	23·5

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